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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,226	04/12/2004	Manfred Hermann	TER-P030541	4625

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EXAMINER

KEELER, KIMBERLY A

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,226

Applicant(s)

HERMANN ET AL.

Examiner

Kimberly Keeler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis (U.S. Patent No. 4,911,839).
2. As to claim 1, Davis ('839) teaches membrane (14) for a membrane plate of a filter press, the membrane comprising: a membrane surface (14) without perforations (column 2 lines 1-2) and having a plurality of supporting elements (15) said supporting elements each having a given surface; a membrane margin (11) enclosing said membrane surface (14); and at least one planar region (14f) disposed spaced apart from said membrane margin (11) and having a surface larger than said given surface of one of said supporting elements and positioned disposed opposite to a inflow (16) in a final mounting state with the membrane plate . See Figures 1 and 2.
3. As to claim 2, Davis ('839) teaches the planar region (14f) which has a reinforcement (17). See Figures 1 and 2.
4. As to claim 3, Davis ('839) teaches a membrane (14) wherein said reinforcement (17) is a thickening of a membrane material of said planar region (14f). See Figure 2.

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5. As to claim 4, Davis ('839) teaches a membrane wherein said reinforcement is an insert of a reinforcing material (36) into said membrane material as described in column 5 lines 13-20. See Figure 7A.

6. Claims 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tigel Gil et al. (U.S. Patent No. 5,658,468).

7. As to claim 15, Tigel Gil ('468) teaches a chamber plate body with a chamber plate margin (24) for contacting at least one chamber; and membrane plate (25) for forming a filter chamber (13) and a plurality of sludge inflows, each of said sludge inflows having an inflow orifice (19) formed therein (column 1 lines 45-58) and spaced apart from said chamber plate margin for introducing a suspension into the filtration chamber and an outlet duct (17) extending in a region of said inflow orifice (18) substantially perpendicularly to a longitudinal direction of the chamber plate as described in column 1 lines 45-58. See Figures 1 and 2.

8. As to claim 16, Tigel Gil ('468) teaches a the chamber plate (24) wherein: said chamber plate body further has a sealing margin slope and an inflow duct (18) formed in said chamber plate body (24), said inflow duct extends from said chamber plate margin into said sealing margin slope; and said inflow orifice (19) adjoins said an inflow duct (18). See Figure 2.

Claim Rejections - 35 USC § 103

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 5-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (U.S. Patent No. 4,911,839) in view of Ruhland (U.S. Patent No. 5,601,709).

12. As to claim 5, Davis ('839) teaches the invention as claimed and further teaches a "snap-fit" assembly with a bead (14b) engaging a groove (11e) that attaches the membrane (14) and filter plate (11) together. See Figure 13. Davis is silent to a sealing lip integrally formed with the bead. However, Ruhland ('709) does teach a membrane further comprising a membrane carrier plate (3) having a groove (9) formed therein; wherein said membrane margin has a peripheral bead (8) engaging said groove of said membrane carrier plate; and further comprising a sealing lip (13) integrally formed firmly on said peripheral bead (8) as described in column 3 lines 1-27 and shown in Figure 1. It is considered to have been obvious to one of ordinary skill in the art to modify Davis'

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bead and groove to include a sealing lip (Ruhland) for the purpose of including an O-ring gasket to further enhance the seal as taught by Ruhland in column 2 lines 18-21.

13. As to claim 6, Davis ('839) and Ruhland ('709) teach the invention as claimed and Ruhland further teaches a sealing strip (14) formed on said peripheral bead (8) in column 3 lines 23-27, which meets applicant's claim. See Figure 1.

14. As to claim 7, Davis ('839) and Ruhland ('709) teach the invention as claimed and Ruhland ('709) further teaches the peripheral bead (8) disposed so as to face away from said sealing lip (13), which meet's applicant's claim. See Figure 1.

15. As to claim 8, Davis ('839) and Ruhland ('709) teach the invention as claimed and Ruhland ('709) further teaches the peripheral bead (8) made of a bead material being identical to said membrane material as shown in Figure 1 and described in column 3 lines 4, which meet's applicant's claim.

16. As to claim 11, Davis ('839) and Ruhland ('709) teach the invention as claimed and Ruhland ('709) further teaches the peripheral bead (8) with a U-shaped holding projection, and said sealing lip (13) is integrally formed on an outer lower edge of said U-shaped holding projection, which meets applicant's claim. See Figure 1.

17. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (U.S. Patent No. 4,911,839) in view of Ruhland (U.S. Patent No. 5,601,709) and Mikkaichi (U.S. Patent No. 6,460,300).

18. As to claims 9 and 10, Davis ('839) and Ruhland ('709) teach the invention as claimed, yet both are silent to the quantitative values of the hardness of the bead material or the sealing lip as measured in Shore. However, Mikkaichi ('215) teaches a

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bead (4a) made of a semi-hard polymeric material with Shore hardness between 90-100 and teaches a sealing lip (4h) with a softer polymeric material with a Shore hardness of 60-75 as described in column 5 lines 35-46. It is considered to have been obvious to one of ordinary skill in the art to manufacture the sealing lip with a lower Shore hardness than the bead because it is well known in the art that the higher the Shore hardness of a material the more resistant the material is to indentation and since the sealing lip must act like a compressible gasket member it is obvious that the lip must have a softer material of manufacture.

19. As to claim 12, it is unclear how the color of the bead material and the sealing lip material add to the structure of the membrane. For examination purposes, claim 12 was examined as the bead and sealing lip having different materials. See above for an explanation of the material configurations of the bead and the sealing lip.

20. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (U.S. Patent No. 4,911,839) in view of Tigel Gil et al. (U.S. Patent No. 5,658,468).

21. As to claim 13, Davis ('839) teaches a membrane plate for a filter press, the membrane containing: a membrane surface (14) without perforations (column 2 lines 1-2) and having a plurality of supporting elements (15) said supporting elements each having a given surface; a membrane margin (11) enclosing said membrane surface (14); and at least one planar region (14f) disposed spaced apart from said membrane margin (11) and having a surface larger than said given surface of one of said supporting elements and a peripheral bead (14b) extending from said membrane margin (11). See Figures 1 and 2. Davis is silent to the membrane plate contacting at

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least one chamber plate to form a filtration chamber. However, Tigel Gil ('468) does teach a membrane carrier plate (25) having a plate margin (25) for contacting at least one chamber plate (24) to form a filtration chamber (13), said membrane carrier plate having a peripheral groove formed therein and said peripheral bead of said membrane disposed in said peripheral groove. See Figure 2. It is considered to have been obvious to one of ordinary skill in the art to use Davis' membrane plate in a filter press configuration next to a chamber plate for filtering the slurry and forming a filter cake as well known and conventional in the art.

22. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (U.S. Patent No. 4,911,839) in view of Stover et al. (U.S. Patent No. 5,198,123).

23. As to claim 14, Davis teaches the invention as claimed, yet does not illustrate the entire membrane and chamber plate filter press to show a mirror-symmetrical longitudinal center axis. However, Stover ('123) does illustrate a filter press with a membrane plate (14) with a longitudinal center axis and constructed mirror-symmetrically about said longitudinal center axis as shown in Figure 2. It is considered to have been obvious to one of ordinary skill in the art to have constructed Tigel Gil's membrane plate in a symmetrical fashion on a longitudinal axis because it is well known and conventional in the art that the mirror image configuration aids in the attachment of membrane plates to chamber plates in a filter press as shown by Stover.

24. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tigel Gil et al. (U.S. Patent No. 5,658,468) in view of Gwilliam (U.S. Patent No. 3,276,594).

25. As to claim 17, Tigel Gil teaches the invention as claimed and further teaches a method for shutting off the sludge inflow to prevent damage to the feed pipes as described in column 1 lines 19-34 and 60-64. Tigel Gil is silent to the use of a non-return valve. However, Gwilliam ('594) does teach a non-return valve for protecting against damage to the feed pipes. See column 3 lines 44-49. It is considered to have been obvious to one of ordinary skill in the art to include a non-return valve on Tigel Gil's sludge inflows as taught by Gwilliam for facilitating the prevention of the sludge inflow re-entering and soiling the feed pipes.

26. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tigel Gil et al. (U.S. Patent No. 5,658,468) in view of Stover et al. (U.S. Patent No. 5,198,123).

27. As to claim 18, Tigel Gil ('468) teaches the invention as claimed, yet does not illustrate the entire membrane and chamber plate filter press to show a mirror-symmetrical longitudinal center axis. However, Stover ('123) does illustrate a filter press with a chamber plate (5) with a longitudinal center axis and constructed mirror-symmetrically about said longitudinal center axis as shown in Figure 2. It is considered to have been obvious to one of ordinary skill in the art to have constructed Tigel Gil's chamber plate in a symmetrical fashion on a longitudinal axis because it is well known and conventional in the art that the mirror image configuration aids in the attachment of chamber plates to membrane plates in a filter press as shown by Stover.

28. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (U.S. Patent No. 4,911,839) in view of Tigel Gil et al. (U.S. Patent No. 5,658,468).

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29. As to claim 19, Davis ('839) teaches a membrane plate for a filter press, the membrane containing: a membrane surface (14) without perforations (column 2 lines 1-2) and having a plurality of supporting elements (15) said supporting elements each having a given surface; a membrane margin (11) enclosing said membrane surface (14); and at least one planar region (14f) disposed spaced apart from said membrane margin (11) and having a surface larger than said given surface of one of said supporting elements and a peripheral bead (14b) extending from said membrane margin (11) (See Figures 1 and 2) and a membrane carrier plate having a plate margin (11) with a peripheral groove (11e) formed therein and said peripheral bead of said membrane (14) being disposed in said peripheral groove (See Figure 13). Davis further teaches inflow orifice (16) formed therein and disposed substantially opposite said planar region (17) of said membrane (14), yet Davis is silent to a plurality of chamber plates each having a plurality of sludge inflows and each of said membrane plates contacting at least one of said chamber plates for forming a filtration chamber. However, Tigel Gil ('468) does teach a plurality of chamber plates (24) each having a plurality of sludge inflows (18) and each of said membrane plates (25) contacting at least one of said chamber plates for forming a filtration chamber (13) as taught in column 1 lines 45-58. It is considered to have been obvious to one of ordinary skill in the art to have a plate stack for a filter press containing a plurality of chamber and membrane plates because it is well known and conventional that a filter press includes a plurality of membrane and chamber plates with a plurality of sludge inflows that are disposed opposite of the planar membrane region support as taught by Davis and Tigel Gil.

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30. As to claim 20, Davis ('839) and Tigel Gil ('468) teach the invention as claimed and Tigel Gil further teaches chamber plate body with a chamber plate margin (24) for contacting at least one of said membrane plates (25) for forming said filter chamber (13) and an inflow orifice (19) (column 1 lines 45-58) spaced apart from said chamber plate margin for introducing a suspension into the filtration chamber (13) and an outlet duct (17) extending in a region of said inflow orifice (18) substantially perpendicularly to a longitudinal direction of the chamber plate, which meet's applicant's claim. See Figures 1 and 2.

31. As to claim 21, Davis ('839) and Tigel Gil ('468) teach the invention as claimed and Davis further teaches the planar region (17) of said membrane (14) disposed and configured to completely cover said inflow orifice (16), which meet's applicant's claim. See Figure 1.

32. As to claim 22, Davis ('839) teaches a membrane plate for a filter press, the membrane containing: a membrane surface (14) without perforations (column 2 lines 1-2) and having a plurality of supporting elements (15) said supporting elements each having a given surface; a membrane margin (11) enclosing said membrane surface (14); and at least one planar region (14f) disposed spaced apart from said membrane margin (11) and having a surface larger than said given surface of one of said supporting elements and a peripheral bead (14b) extending from said membrane margin (11) (See Figures 1 and 2) and a membrane carrier plate having a plate margin (11) with a peripheral groove (11e) formed therein and said peripheral bead of said membrane (14) being disposed in said peripheral groove (See Figure 13). Davis further

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teaches inflow orifice (16) formed therein and disposed substantially opposite said planar region (17) of said membrane (14), yet Davis is silent to a plurality of chamber plates each having a plurality of sludge inflows and each of said membrane plates contacting at least one of said chamber plates for forming a filtration chamber. However, Tigel Gil ('468) does teach a plurality of chamber plates (24) each having a plurality of sludge inflows (18) and each of said membrane plates (25) contacting at least one of said chamber plates for forming a filtration chamber (13) as taught in column 1 lines 45-58. It is considered to have been obvious to one of ordinary skill in the art to have a plate stack for a filter press containing a plurality of chamber and membrane plates because it is well known and conventional that a filter press includes a plurality of membrane and chamber plates with a plurality of sludge inflows that are disposed opposite of the planar membrane region support as taught by Davis and Tigel Gil.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Keeler whose telephone number is 571-272-2460. The examiner can normally be reached on Monday-Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kak
12/22/04


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